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Title

Food and Nutrition Security Policies in the Caribbean: Challenging the Corporate Food Regime?

Abstract

Trinidad and Tobago is contributing to climate change by maintaining a model for food security that is based on corporate controls over food and agriculture. With policy documents, media sources, and ethnographic data, I argue that Trinidad and Tobago's food system is connected to national and transnational markets that firmly affix the country's food system to the fossil fuel economy. Three examples are provided. The first is the adoption of the World Bank's 'value chain' model for agriculture, which favours larger, economically (rather than ecologically) efficient farmers. The second is the recent state-led campaign to 'put T&T on your table', which overlooks the political prioritisation of industrial food imports exemplified by current policies to eliminate VAT (Value Added Tax) on industrial food imports. The final example is the November 2013 Memorandum of Understanding between Trinidad and Tobago and Guyana, under which Guyanese lands are being converted for the industrial production of corn, soya, and other crops for final processing and consumption in Trinidad and Tobago. While such policies are justified under the label of national and regional food security, I argue that they perpetuate a Caribbean-style corporate food regime that counteracts more climate-sensitive efforts to create sustainable producer-consumer networks.

Key words

Corporate food regime, food security, climate change, Caribbean, Trinidad and Tobago, Guyana

Introduction

The question of carbon emissions roots global problems in ... the energetic foundations of modernity itself.

Peet *et al.* (2011: 10)

According to Philip McMichael (2005: 265), the corporate food regime displaces subsistence ('peasant') agriculture by industrially-produced food imports and promotes industrially-produced agro-exports over local food production. Industrialised agriculture makes up 10-12% of annual greenhouse gas (GHG) emissions, and at least 30% of global GHG emissions when factors such as deforestation, fuel for machinery and transport, and petrochemical production and use are taken into account (Conway 2012: 306-7, citing The Intergovernmental Panel on Climate Change [IPCC]). These climate risks are reinforced by many of the Trinidad and Tobago government's food security policies, which promote imports and exports of industrially-produced food, thereby reinforcing the corporate food regime.

In this paper I argue that food security policies in Trinidad and Tobago reflect the corporate food regime because they encourage industrial food production for export and domestic consumption, while

supporting continued reliance on imports from the US and, now, Guyana. In Chris Philo's terms (2012) the 'big-S' Food Security concerns of powerful interests in Trinidad and Tobago (such as the state and corporate actors) eclipse the 'small-s' food security concerns of less powerful actors (such as agroecological farmers and consumers concerned about agrochemical use). I analyse media and policy documents from Trinidad and Tobago and the Caribbean and use survey and interview data collected during a 6-week period of ethnographic research (June-July 2014) to show how food production, processing, and consumption in Trinidad and Tobago are connected to national and transnational markets that firmly affix the country's food system to the fossil fuel economy.

The paper is divided into four parts. In the first I provide a brief background to the 2011 Regional Food and Nutrition Security Policy of CARICOM (The Caribbean Community and Common Market)¹ and its national variant in Trinidad and Tobago. Then I show how the Regional Food and Nutrition Security Policy of CARICOM (RFNSP) reproduces the corporate food regime and associated climate risks by conforming to the World Bank's model of 'value chain' farming. In the second part I highlight related contradictions of food security policies in Trinidad and Tobago, particularly the 2011 campaign to 'put T&T [Trinidad and Tobago] on your table' and the zero-VAT (Value Added Tax) measure of 2012. Discrepancies between the 2011 campaign and the zero-VAT measure underscore the continued importance of the corporate food regime in Trinidad and Tobago, supported by the combined interests of government officials and food importers. The third part of the paper focusses on another project for regional and national food security that is increasing the *insecurities* of affected populations and environments: the 2013 Memorandum of Understanding (MoU) between Trinidad and Tobago and Guyana, under which Guyanese lands are being converted to mega-farms to produce, among other things, corn and soya feed for animals reared in Trinidad and Tobago. I argue that plans set forth in the recent MoU jeopardise the livelihoods of small farmers in Trinidad and Tobago and reduce the carbon offsetting potential of tropical forests in Guyana. I conclude that social and environmental injustices

perpetuated by Trinidad and Tobago's food security policies may be rectified if the climate change adaptation and mitigation potential of agriculture is recognised in food security agendas.

Case I. The RFNSP and the World Bank's model for value chain agriculture

Food security is now a central concern for policymakers in the Caribbean. In 2003 and 2008 the first and second phases of the Food and Agriculture Organization's (FAO) project for food security in the Caribbean was initiated with a total budget of just under US \$9 million (FAO 2012). After the global food crisis of 2008-2009, when prices for staple commodities like corn and soya rose steeply, FAO continued to support efforts towards Caribbean food security. The resulting Regional Food and Nutrition Security Policy (RFNSP) of 2010 has become a model for food security policies (and preliminary 'action plans') for all member states in the CARICOM region, including Trinidad and Tobago.²

Like earlier policies,³ the ostensible aim of the FAO-led RFNSP is to counteract the region's long-term dependency on the global market for imports of primary commodities like feed corn:

Since ninety percent of the food consumed in the CARICOM region is imported either raw or semi-processed for final processing, the food and financial crises of 2008-2009 and 2011, and the resulting volatility of food prices, have brought the CARICOM region face to face with the harsh financial, food security and health-related consequences of such high dependence on food imports. ... Even the food commodities produced within the region depend to a large extent on imported inputs. Thus when there is a drought in Russia or floods in Pakistan, as happened recently, the food import bill of the region jumps to a new high and the cost of local chicken and domestically produced livestock soars because the region imports [from the United States] the maize and other constituents of the animal feeds on which they are fed (Regional Food and Nutrition Security Action Plan 2011: 1).

The two main objectives of the RFNSP and national action plans are: 1) to create regional and national 'value chains' by establishing links between small and medium-sized farmers and food industries in the region and 2) to cut imports of key commodities from the United States such as feed corn. While the latter objective is leading to the creation of regional supply chains and the conversion of lands for food and feed in countries like Guyana (see case III, below), the former is consistent with the

most recent model for agricultural development promoted by the World Bank (2008), which sees small farmers as key actors in value chains.

The value chain concept reflects the recent re-valuation of small farmers by international institutions such as the World Bank. This 'new' model for agricultural development contrasts with earlier structural adjustment policies of the 1980s and 1990s, under which developing countries in the Caribbean and elsewhere were required to import a minimum amount of raw materials and food manufactures from countries such as the United States in repayment for loans issued by the International Monetary Fund (IMF). Under the IMF's structural adjustment policies, countries in the Caribbean and elsewhere were encouraged to import foodstuffs from developed countries while producing 'non-traditional' exports for developed countries such as fruits and vegetables. By contrast, the World Bank's (2008) value-chain approach promotes the creation of more localised producer-consumer networks, alongside a continued focus on non-traditional exports.

At first glance, the World Bank's value chain approach seems to overcome the long-term neglect of small farmers across the developing world, while counteracting tendencies of the corporate food regime such as import dependencies. Yet the World Bank's value chain approach (to which we shall soon return) differs in important ways from more ecological accounts of small-scale farming. For instance, the much-cited International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD 2009: 29) promotes lower-input, more diversified agroecological farming for enhancing the livelihoods of smaller, 'resource-poor' farmers. According to Miguel Altieri (2007) agroecological practices such as mulching, inter-cropping and the use of worm humus counteract the tendency to simplify agricultural ecologies through monocultures and synthetic inputs, increasing the biodiversity of soils and environments. Carbon sequestration from agricultural soils that have been treated in such ways has the potential to offset 5-15% of global fossil fuel emissions (Conway 2012: 311). In his final report of December 2014, former United Nations Special

Rapporteur on the Right to Food, Olivier De Schutter, argues that small farmers are the primary exemplars of sustainable, agroecological production (De Schutter 2014: 3). According to De Schutter (2014: 3), small farmers often practice agroecological methods, which reproduce ‘the whole farm [eco]system’ largely without the need for external inputs such as insecticides and fertilizers. By contrast, the industrial model for agriculture focuses on ‘individual farm components’ such as monocultures (Wright 2012), the reproduction of which usually requires high volumes of external inputs made from fossil fuels.

There are numerous voices in the Caribbean that reflect these perspectives on small farmers’ agroecological practices. One is the Caribbean Farmers’ Network (CAFAN), which includes small farmers from Trinidad and Tobago. In its recent Position Paper (CAFAN 2014), CAFAN claims that Caribbean ‘small farm families’ are the primary forerunners for climate change adaptation and mitigation in the region because they can more easily adopt agroecological methods such as crop rotation and integrated pest management. Taking CAFAN’s message to the context of women farmers in Trinidad and Tobago, The Network of Rural Women Producers of Trinidad and Tobago actively support the development of agroecological producer-consumer networks at local, national and regional scales (Wilson, ethnographic notes).

Like CAFAN and other small farming groups, the RFNSP and its national variants encourage the provision of economic incentives for smaller farmers who are able to enter into local and regional producer-consumer networks. Yet value chain agriculture favours more industrial forms of production than agroecology, such as supplying monocultures for supermarkets (see below). Indeed, unlike CAFAN and other small farmers’ groups in the Caribbean, regional and national food security policies largely perpetuate the corporate industrial model for agriculture, encouraging farmers to become ‘agribusinessmen’ by accessing credit for the purchase of agrochemicals (RFNSP 2011: 13). By supporting efficient farmers-cum-entrepreneurs, the RFNSP and National Food Production Action Plan of Trinidad

and Tobago aim to establish an autonomous regional market to compete with the prevailing US market for food products:

The wider context in which the RFNSAP [Regional Food and Nutrition Security Action Plan] is being pursued and in which development efforts in the CARICOM region in general should be conceived is the CARICOM Single Market and Economy (CSME). The CSME is intended to benefit the people of the region by providing more and better opportunities to produce and sell goods and services and to attract investment (RFNSP 2011: 10).

While these policies aim to establish a common market that competes with *food* imports from the United States, their 'output-driven' (NFPAP of T&T 2012: 21) emphasis means that imports of agricultural *inputs* from the US, and the production of agrochemicals in Trinidad and Tobago (an oil and gas economy), remain unproblematised. Unlike more agroecological approaches to food security, present policies in Trinidad and Tobago do little to counteract the country's carbon emissions, which, at 35t per capita per year, is among the highest in the world (with 168,000t CO₂e₃ emissions attributed to de-forestation for agriculture and industrial development; UNEP RISØ 2013: 6-7).

According to Pereira *et al.* (2007), the Trinidad and Tobago government does not regulate the sale and use of imported agrochemicals such as Gramoxone and even children may use them. Produced by the MNC company, Syngenta (with headquarters in the US state of North Carolina), Gramoxone of the most popular brands of pesticides and herbicides in Trinidad and Tobago. Such agrochemicals are more likely to be used for domestic food production than for exports, as indicated by a farmer interviewed during a day at the NAMDEVCO (National Agricultural Marketing and Development Company) wholesale market:

If you are interested in exporting produce, you have to control the chemicals. But with normal [local] markets, there is no control. ... They used banned chemicals, like Lannate [an insecticide produced by the US company, Du Pont] ... They don't have a way of testing it for the local market. Sometime[s] you have no choice. If it [is] working, you got to use it (interview, 27 June 2014).

Along with the environmental costs of encouraging the production of monocultures, there are social and health-related costs. In a survey I conducted in 2014 with nearly 198 consumers at a number of

shopping malls in Trinidad and Tobago, the majority of respondents mentioned their concerns about agrochemicals. When asked whether they cared about where their food comes from and, if yes, why, 94% answered 'yes'; of these 79% said they were concerned about the use of agrochemicals in the production of commonly-eaten vegetables and fruits such as cabbage, watermelon, tomatoes, and avocado (zaboca). Though a survey in shopping malls is arguably biased towards wealthier consumers, it was clear from ethnographic fieldwork (conducted in 2014 but also during periods of 2009-2013, when I lived and worked in Trinidad) that high agrochemical use concerns many consumers in Trinidad.

In Arangüez, the bread basket of Trinidad [in northwest Trinidad], they planting same thing over and over and the soil tired. They have to use chemicals. ... People saying they going vegetarian, doing this thing, but they don['t] know how much chemical they eating. ... You get a [water]melon on the side of the road, and it look big, big, but you look at the stem and it [is] still green [Trinidadian man in his late sixties] (Wilson, ethnographic notes).

During fieldwork, a number of people of different generations and socio-economic backgrounds expressed similar concerns about the highly industrialised methods of food production in their country.

Though steps are being taken to control high agrochemical use (see part II), current emphasis on value chain agriculture in the RFNSP and the National Food Production Action Plan of Trinidad and Tobago (NFPAP) perpetuates an industrial model that requires an ever-increasing use of agrochemicals to continue monocultural production. For all its emphasis on local and regional markets, value chain agriculture actually fosters the *internationalization* of the agrifood chain (supplying local MNCs such as Massy Supermarkets⁴ as well as MNCs external to the Caribbean such as Nestlé), while keeping the most local food production beyond the controls of international regulatory bodies that ensure safe agrochemical use (Pereira *et al.* 2007).

Regional and national policies geared towards the creation of value chains in the Caribbean often undermine other ways of valuing food, the socially-embedded ways it is produced, its relation to health, and the soil, air, water, and biodiversity that are fundamental to agricultural reproduction. But

the RFNSP has wider, internationally-driven aims that contrast with a wholly economic view of agriculture. As a 2012 FAO evaluation report on the progress of the RFNSP states:

The project's relevance ... is tilted more towards value chain work than towards food and nutrition security: the majority of its outputs as well as expenditure go in that direction, and the link between higher-level food and nutrition security work and the market and production-oriented value chain work has not always been evident (FAO 2012: 7).

Authors of the FAO report also express concern about the most important actors in the chain: farmers.

[T]he level of value chain commitment and knowledge especially among farmers seemed low: it appears that the institutionalization of the value chain concept has only just begun (FAO 2012: 10-11).

Despite following an interactive approach in the value chain work that included several meetings with stakeholders, some comments by regional actors mentioned a lack of transparency in the value chain selection process (FAO 2012: 8-9).

The 'value chain selection process' means the power to determine who gets to produce in supermarket value chains, and who does not. The kinds of producers who can ensure a consistent supply of fresh produce to supermarkets like Massy, usually with the help of high-input production, are favoured over more agroecological farmers. One of my primary informants, who works for the Inter-American Institute for Cooperation on Agriculture (IICA), claimed that the sheer scope of Massy's investment portfolio, which includes food retail as well as motor vehicles, finance, insurance, industrial equipment, energy and industrial gases, among other sectors, distracts its attention away from social and environmental justice issues related to food production: 'Massy don't only deal with food. They only see these things as profit makers. They are not interested in sustainable production; they are not interested in agricultural development'.

Value chain agriculture perpetuates fundamental assumptions about the goals and aims of agriculture that are consistent with the corporate food regime, namely the idea of food as a commodity and of farming as an input/output-driven process that supports industry. As Friedman (1982, 1992, 1994, 2004) and McMichael (2009, 2012, 2013) argue, under the corporate food regime, the very objectives of food production, exchange and consumption are defined in terms of a very narrow

conception of value: the monetary value of food as a commodity over all other forms of value, such as the potential role of agriculture in mitigating climate change (McMichael 2013: 672, 674). It is for this reason that 'big-S' Food Security projects like the RFNSP and the NFPAP of Trinidad and Tobago must be distinguished from the 'small-s(es)' that define the security needs of small-scale farmers and consumers concerned about high agrochemical use.

Case II. 'Putting T&T on your table' and Value-Added Tax

In this section, I briefly outline some fundamental objectives of the 2012 National Food Production Action Plan of Trinidad and Tobago (NFPAP of Trinidad and Tobago) and the government's campaign to 'put T&T food on your table', both of which are largely based on the RFNSP explained above. I contrast these initiatives with a recent mandate implemented by the present government of Trinidad and Tobago to eliminate Value Added Tax (VAT) on over 7,000 manufactured foodstuffs, mostly imported from the United States. I argue that the admirable aims of the NFPAP of Trinidad and Tobago to nationalize food networks by 'putting T&T food on your table' are compromised by a partisan politics that relies on the continued procurement of industrial food imports from outside of the Caribbean.

The 2012 NFPAP of Trinidad and Tobago draws from a government campaign established in 2011 to 'put T&T on your table', encouraging citizens and residents of Trinidad and Tobago to help reduce the TT\$4 billion (about US\$625 million) import bill by buying from local farmers and cooking food in traditional ways. Like the RFNSP, the main objectives of the NFPAP of Trinidad and Tobago are 1) to save on foreign exchange by reducing food imports and 2) to increase the domestic production of six key commodities: staples (rice, sweet potato, cassava and breadfruit), vegetables, legumes and pulses, fruits, livestock and aquaculture (NFPAP of T&T 2012: 6). As then Minister of Food Production (to whom we shall return) writes on the first page of the action plan:

The increase in global food prices has the potential to adversely impact local inflation due to our large food import bill which in 2010 amounted to 10.06% of total imports. ... [A]n increase in

international food prices can negatively impact our trade balances as a result of higher import bills. This is certainly a challenge to developing economies like Trinidad and Tobago (NFPAP of T&T 2012: 1).

The NFPAP of Trinidad and Tobago signals the need to reverse this reliance on food imports from the US while promoting the production of 'non-traditional' exports such as pumpkins, tomatoes and hot peppers under the same value chain approach addressed above. To foster value chain creation, the NFPAP claims to have redistributed about 5,000 hectares of state lands to efficient small and medium-sized farmers and established an Agriculture Labour Programme to draw unemployed workers to agriculture. Significantly, the policy has also initiated a certification programme for recommended pesticide use and promotes the development of pesticide residue testing: 'The judicious use of pesticides on vegetables is essential for both the health of the local population and for acceptance in the international arena. This plan will tackle the widespread misuse of pesticides on vegetables' (NFPAP of T&T 2012: 8). There is no mention, however, of controls over the use of other potentially harmful agrochemicals such as nitrogen fertilisers, of which Trinidad and Tobago is one of the largest producers in the world (exporting enough to support a quarter of nitrogen fertilizer used by US farmers; Philpott 2010).

Though some of these recent initiatives reflect positive steps towards a more sustainable and socially just food system in Trinidad and Tobago, other policies of the present government illustrate a continued reliance on the corporate food regime. Perhaps the most controversial policy in this vein was the elimination of VAT on a number of industrial food products sold in supermarkets across Trinidad and Tobago, under the Zero-VAT Bill passed by the Trinidad and Tobago Parliament in late 2012. The Prime Minister of Trinidad and Tobago initiated this so-called 'temporary' measure in November 2012 (still in place in 2014) to ease household food budgets. As with earlier leaders in Trinidad and Tobago (e.g. Eric Williams; see Wilson 2013: 111-113), the prime minister appeared to be cheapening commodities imported from outside of the Caribbean (or processed in Trinidad and Tobago with imported raw

materials) to appeal to her constituencies and, perhaps, to powerful interest groups like food importers.

According to a key informant (whose affiliation is not provided to ensure his/her anonymity):

There is subtle corruption in the food sector. ... When the Minister of Food Production claims the food import bill is 4 billion (TT) dollars, he just makes this statement and doesn't do anything about it. ... The major importers started with food in the 1970s, then they started to diversify into car imports, insurance, you name it. And there are inflated contracts with the government for all of these things. ... Many of the big companies have two brothers – one who supports this government and the other who supports the last [government]. You know why? So they have all their bases covered. When one of dem lose, the other one [is] there to prop up the business (interview, 30 June 2014).

According to this account, there are clientelistic relations in Trinidad and Tobago between politicians and food importers, who are often the same as food processors. As another interviewee said:

There are six or seven families who have been importers of food since the 1970s. These importers eventually became [food] processors. Matouks [a food processing company], for example, has a range of canned products but they import the raw materials. Others are Persaud, Maharaj, Vemco, which is named after its owner, Victor Mouttet, who also owns Prestige Holdings [a restaurant management company that operates over a hundred franchises of Kentucky Fried Chicken, Pizza Hut, TGI Fridays, and other MNC restaurants in Trinidad and Tobago]. ... They use their inputs that are imported to supply supermarkets like Hi Lo [Massy]. ... These would have been the importers of dry goods so it was easy for them to move into processing (interview, 24 June 2014).

Since the post-war period, when the agricultural economies of developing countries such as Trinidad and Tobago shifted away from domestic agriculture and towards industrial development (in the case of Trinidad and Tobago, in the oil and gas industry), industrial food imports (assisted by US 'food aid' [Friedmann 1982]), have continued to work as a 'social wage ... [that] ... ensures a productive and complacent labor force [*sic*]' (Guthman 2011: 54). The United States Department of Agriculture (USDA) estimates that import demand for US foods in the Caribbean increased by 10% annually over the 2004-2013 period, and targets for 2014 are forecasted to set a new record (US \$1 billion) for the value of US food exports to the region (USDA 2014). In 2011 (the latest statistics available), Trinidad and Tobago's exports of food and live animals to other CARICOM countries amounted to about \$156.6 million US dollars, while imports of the same category from the United States (many of which were used to produce the final products for export to CARICOM) amounted to nearly twice as much, at \$300.9 US

dollars (Republic of Trinidad and Tobago Central Statistical Office 2013: 43, 45). Along with this continued reliance on food imports to feed the voting masses, the Zero-VAT Bill reflects long-term relations between elites in Trinidad and Tobago who share an interest in maintaining a disarticulation (*cf.* De Janvry 1981) between producers and consumers by promoting agricultural exports and food imports.

The list of items on which VAT taxes have been removed include: biscuits, dairy spreads, cream, cake mixes, maraschino cherries, breakfast cereals, olives, tinned beans and sweet corn, juices, tinned and dried soups and tinned sausages, many of which are processed by the companies listed above with imported inputs from the US such as wheat, sugar (once a dominant export commodity) and corn (maize). It is clear that, rather than farmers, the policy favours actors higher up the value chain, namely processors, packaging companies, traders, importers, supermarket retailers, and MNCs such as ConAgra (who manufacture many products found on Trinidad and Tobago's supermarket shelves). The removal of VAT on many imported food products in Trinidad and Tobago reflects continuities of a corporate food regime founded on industrial, high carbon foot print food, usually imported from the United States. The Zero-VAT Bill illustrates fundamental *political* difficulties of developing more localised and sustainable producer-consumer networks in the face of well-established connections between the Trinidad and Tobago government and its food and drinks industry, which in turn depend on *international* connections to MNCs such as Con-Agra and Kentucky Fried Chicken. As one of my informants said: 'Politics keeps local food down'. As suggested elsewhere (Wilson and Parmasad 2014), long-term 'power geometries' (Massey 1991) between state and market actors in the Trinidad and Tobago food economy are continuous with a colonial history in which externally-oriented elites gained much control over domestic (food) policies (see Beckford 1972).

Contradictions between the Zero-VAT measure and NFPAP policies are neatly passed over with the uniform language of 'food security', which is used by people on both sides of the debate. While the

NFPAP of Trinidad and Tobago and government campaign to ‘put T&T food on your table’ utilize the term ‘food and nutrition security’ in the context of a rising food import bill, the concept of food security is also used to justify the policy to eliminate VAT from many imported industrial food products. Thus according to former Minister of Food Production: ‘the VAT-free measure [is] not necessarily meant to remain in perpetuity but the intention [is] to build domestic food security, and then when the local food production sector ha[s] reached that comfortable mass then the system w[ill] be re-evaluated’ (Bridglal 2012: 1). Here, the minister is using food security in both senses: in reference to cheap imported food but also in reference to local food production. But this minister *can* have his cake and eat it too, for the very person in charge of compiling the VAT-free list was none other than himself, the newly appointed Minister of Trade, Industry and Investment (formerly the Minister of Food Production!).

The policies considered in this section reflect competing projects for food security based on different spatial imaginaries with diverse social and environmental outcomes. In the final section below I continue to explore the theme of contested food securities and their socio-environmental impacts in the context of another recent policy that is justified in the name of food security. Like the RFNSP and the NFPAP of Trinidad and Tobago, the 2013 Memorandum of Understanding (MoU) between Trinidad and Tobago and Guyana is geared towards developing more localised markets to counter the region’s high dependency on feed and other imports from the United States. I argue, however, that this policy for regional food security is leading to a number of social and environmental *in*securities in Trinidad and Tobago and Guyana. As Philo (2012: 1) argues, ‘grand-standing statements about security ... depen[d] upon exactly *who* is the *our* and *we* ... since the insecurities faced by many of the world’s peoples – and hence the measures that might improve their senses of security – may well not be the same as those recognized by ... the powerful elites’.

Case III. The MoU between Trinidad and Tobago and Guyana

In March 2013, the governments of Trinidad and Tobago and Guyana signed a Memorandum of Understanding (MoU) that will release up to 100,000 acres of Guyanese lands (10,000 acres in the first instance) for lease to Trinidad and Tobago and Guyanese nationals on which key staples such as corn and soya feed will be produced by agricultural workers in Guyana (Republic of Trinidad and Tobago Finance Ministry 2014). The lands to be converted in the first instance are located in the southern Berbice-Corentyne region (Region 6; see fig. 3), which is mostly populated by Guyanese of East Indian descent (68.7%), Guyanese of African descent (21.1%), Guyanese of mixed race (8.4%) and Amerindians (mostly Arawak; 1.6%; statisticsguyana.gov.gy/download.php?file-22).

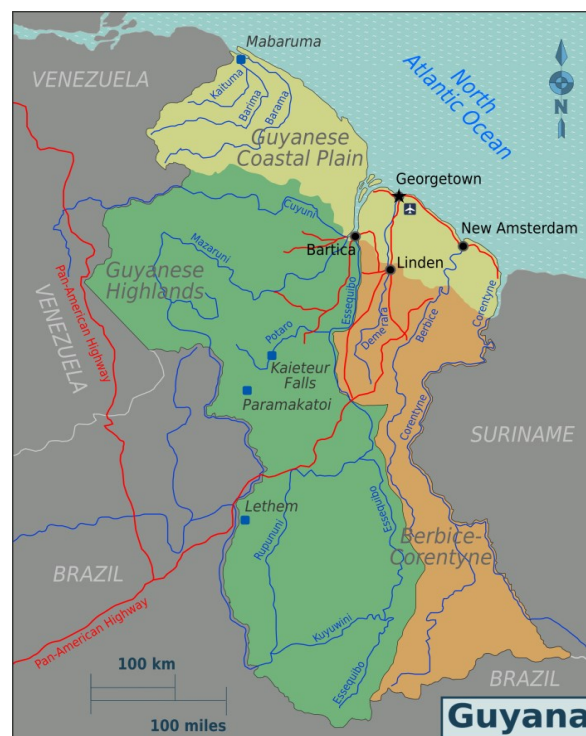


Fig. 1 Map showing the Berbice-Corentyne region of Guyana
Source: user:burmesedays, Perry-Castañeda Library Map Collection Guyana Maps
(http://wikitravel.org/shared/File:Guyana_Regions_map.png)

Like other policies enacted in the name of regional food security, the ostensible aim of the 2013 MoU is to reduce food imports and to stem CARICOM's vulnerability to volatile global prices for primary food commodities such as feed corn. The Ministers of Food Production and Agriculture from both

countries have made public statements about how the MoU will stem rising food import costs while contributing to economic development and food security:

These strategies being utilised are geared towards the goal of Trinidad and Tobago, and also Guyana, reducing our food import bills from countries outside of the region, increasing our own food security inter-regionally and bringing down food inflation in our respective countries—all with the backdrop of creating sustainable employment and diversification of our economies (Trinidad and Tobago Minister of Food Production, Devant Maharaj; Boodan 2013: 1).

Any business that is established here creates jobs and an inflow of wealth to the national GDP and treasury. Our export [*sic.*] will increase because whether it is produced by Trinidadians or Chinese,⁵ it is still Guyana's products ... we are working with Trinidad so as to ensure that what is produced on our farms will have value-added in Guyana. This includes agro-processing and packaging, which will be done in Guyana (Agriculture Minister of Guyana, Dr. Leslie Ramsammy; *Stabroek News* 15 Sept. 2013).

Under the scheme, the Trinidad and Tobago Ministry of Food Production is encouraging 'Agro-Investors' in Trinidad and Tobago to invest in the plan:

The Government of Trinidad and Tobago will invite private sector investment in agricultural production in Guyana, and will work with the Government of Guyana to provide a facilitating environment and the necessary support to attract such investments. We have requested of the Government of Guyana that investors from Trinidad and Tobago be eligible to access incentives currently available to Guyanese farmers and be allowed to repatriate profits (Republic of Trinidad and Tobago Ministry of Finance 2013).

The policy is promoted as a 'win-win' deal for both countries – providing a stable supply of feed and other foodstuffs for Trinidad and Tobago's meat and food industries while boosting Guyana's Gross Domestic Product (GDP) through the creation of jobs and exports. Yet there are winners and losers within each country. While the winners are the potential investors and food industry stakeholders who may have access to a regional outlet for primary food commodities, the losers are both human: agricultural labourers in Guyana whose lands and livelihoods may be lost and who may be subjected to exploitative work conditions, and non-human: the soils, landscapes, and forests in Guyana and their diverse forms of plant, animal, and microbial life. While the current state of agricultural and forest land use in the Berbice-Corentyne region of Guyana is largely beyond the scope of this paper (though see fig. 4), it is clear that a significant number of agricultural workers will be needed for the mega-farms (precise

numbers are unavailable). It is also clear that the MoU is based on monocultures of corn, soya, and other crops (Republic of Trinidad and Tobago Ministry of Finance: 2013), which are likely to derive from genetically modified seeds requiring elevated applications of agrochemicals, thereby exacerbating climate risks.

Trinidadian farmers are also unwittingly involved, since food and feed production on Guyanese mega-farms will force a downward pressure on prices, again contributing to the 'social wage' of the Trinbagonian voting population. As an anonymous reader wrote, perhaps hyperbolically, 'In this deal, wealthy investors from Trinidad will put farmers in Trinidad out of business and farmers in Guyana will work as slaves on the mega farms. Only the rich will gain and all others will suffer' (*Stabroek News* 15 Sept. 2013).

The MoU between Trinidad and Tobago and Guyana represents a privatized version of food security that not only establishes social and environmental *in*securities among affected peoples and environments, but also contrasts with alternative ideas about regional and national food security evident in the words of Caribbean farmers and farmers' associations. As president of the Caribbean Farmers' Network (CAFAN; <http://www.caribbeanfarmers.org/>) wrote me in an email conversation

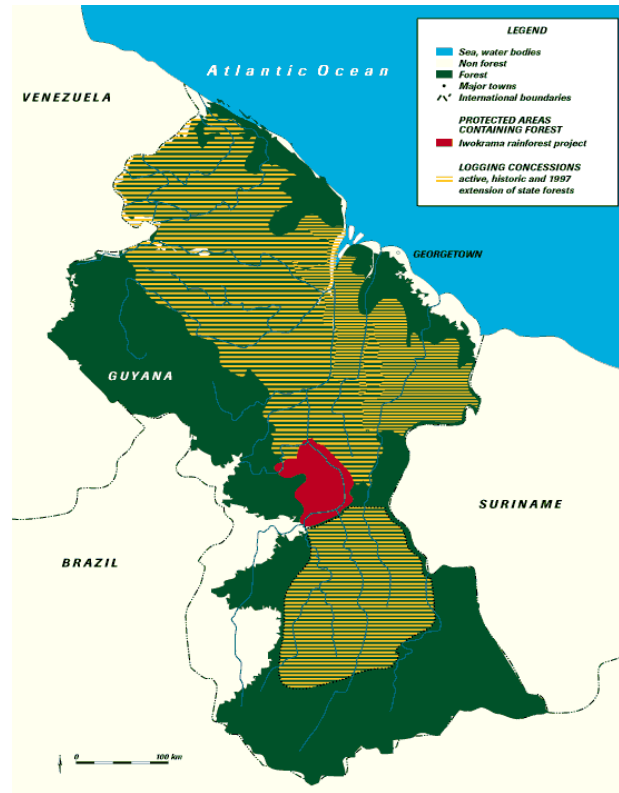


Fig. 2 Map of the forest cover of Guyana. A large area in the southeastern Berbice-Corentyne region is covered with forest (see fig. 3)

Source: Forest Monitor (<http://www.forestsmonitor.org/fr/reports/550066/550081>)

on the subject:

Some of us see the region as one country and feel that it should not be an MoU with Trinidad and Tobago but a policy position available to others like CAFAN because we are one region. ... What we do not want to see is the small farm families/small farm system undermined because large-scale mega farms are not very sustainable for long-term food production (email communication, 20 April 2014).

Greene's words are indicative of an alternative view of regional food security that starts with the empowerment of small farmers and small farming communities across the Caribbean, rather than focusing on the industrial development of selected lands. Reports from farmers' associations in Trinidad and Tobago and Guyana illustrate a comparable stance. For decades small farmers in Trinidad and Tobago have sought secure land tenures and state supports for agriculture, though many prime agricultural lands continue to be converted to residential properties and industrial estates (Stanfield and

Wijetunga 2007; Richardson and Richardson-Ngwenya 2013: 10-13). As a colleague in the Trinidad and Tobago agriculture sector said:

Land transfers are being made for prime agricultural land. It is being converted to malls, residential areas ... It's just that we never do land capability studies. There are other forces at play. ... As the calypsonian would say, we are very good at planting houses. ... This has been going on since the colonial days. Remember that this was a colony, not like the US, not for settlers. People who came here were not here to stay, they just wanted to take as much out of it as possible. They were estates back then (interview, 15 July 2014).

Such trends reflect wider processes of (sub)urbanisation across the globe, which give rise to environmentally-harmful practices such as increases in the use of private cars for transport (Desai 1985). Instead of providing farmers roads, irrigation systems, and access to government lands, public and private interests in Trinidad and Tobago are opting for the more lucrative route of 'planting houses'. For small farmers in Trinidad and Tobago, the MoU signals a similar disregard for their interests:

Our farming communities have been looking to the government to rectify expired leases for the past 18 years in Trinidad ... we have been looking to the government to develop the land here in Trinidad, charity begins at home. Now they said that to reduce the food import bill we go to Guyana. ... We can reduce that by farming here (Shiraz Khan, former President of the Trinidad and Tobago Farmers' Association, Balgobin 2013).

Right now our farmers are unable to get leases, irrigation ponds, and proper infrastructure. This is unfair to us. They need to see about our farmers first. This is a slap in the face for us. ... We are calling for this decision to be rescinded (Terrence Haywood, President of the Trinidad and Tobago National Food Crop Farmers' Association, *Starbroek News* 15 Sept 2013).

You leaving our farmers in Trinidad and Tobago to go Guyana. What you all going to do there? They [the government] gave out 1,000 acres of land for the Chaguanas West by-election and they going to plant 10,000 acres in Guyana. If it is they give the farmers here, proper road to go into their lands, give them irrigation systems in the dry season and save them from flooding in the rainy season, we will be able to produce food (Shiraz Khan, president of the Trinidad and Tobago Farmers' Association, *Starbroek News* 12 Sept 2013).

The MoU is continuous with the corporate food regime, in which the diverse array of social and environmental values underpinning food production and consumption are largely treated as 'externalities'. In this model: 'only monetized transactions [are] considered productive, thereby devaluing subsistence, cooperative labour, indigenous cultural practices, seed saving, and commons management as unproductive and undeveloped activity, and, on the other hand, valuing industrial

agriculture (McMichael 2009: 3). The MoU also reflects an industrial capitalist agenda based on the production and processing of monocultures, this time for animal feed.

Food and agriculture in the Caribbean: climate risks, responsibilities and potential adaptation and mitigation strategies

Across the world, the mass production of feed and animal protein heightens the 'metabolic rift' (Moore 2000) between countryside and city via petroleum-based inputs and the use of machinery in manufacturing and transport. At the same time, rising middle classes are increasing their consumption of animal protein over plant-based protein. The metabolic rift between feed production and meat consumption is particularly acute in the global South, and it is predicted that by 2020 urban consumers in developing countries will eat 107 million metric tons (mmt) more meat than they did in 1998, while only 19 mmt more meat will be consumed in developed countries over the same period (Delgado 2003). According to President of the Trinidad and Tobago Agribusiness Association, Vassal Stewart (2011: 7), consumers in Port of Spain are currently eating at least 60% more meat than World Health Organization (WHO) recommendations, importing 95% of the meat and nearly 100% of the feed from the United States and the Amazon region of Guyana.⁶

According to future climate change scenarios, Trinidad and Tobago will face higher risks of flooding and significant rises in sea levels over the coming decades,⁷ which will arguably limit the potential for food and feed production in regions currently geared towards agriculture (particularly southern and coastal Trinidad). Moreover, climate change is expected to increase mean temperatures and drought conditions across the globe, leading to volatile prices for feed grown on affected farms including those in the United States. Given such climate risks, the US may opt to protect its own feed supplies by restricting exports, using its disproportionate 'room to manoeuvre' in the World Trade Organisation (Weiss 2005). If one focuses on supply, then it makes sense that the government and

private sectors of Trinidad and Tobago are investing in joint projects for feed farms in interior areas of Guyana which are less prone to such climate risks.

If one focuses on *demand*, however, it is clear that many people in Trinidad and Tobago and other developing countries are eating increasingly unsustainable amounts of meat. Demand-driven projects like the mega-farms in Guyana or the high-input value chains promoted by the RFNSP must be considered in terms of their effects on climate change. According to the United Nations Food and Agriculture Organization's (FAO) *Livestock's Long Shadow* (2006) report, the global livestock industry releases 18 percent of global greenhouse gas (GHG) emissions (measured in CO₂ equivalent), even more than the transport industry (Conway 2012: 317). As suggested above, these estimates do not include the environmental impacts of packaging, processing, transport, and waste, the GHG emissions of which are estimated to be 10-15% of global emissions (Richie and Martínez 2011: 17). In the Amazon region including some areas of Guyana targeted for the MoU, mass deforestation for feed and pasture contribute a further 17 percent of global greenhouse gas emissions (FAO 2006). Industrialised agriculture in tropical and rainforest regions depletes at least 75% of soil organic carbon, compared to a 60% conversion rate in temperate regions (Conway 2012: 309).

By contrast, smallholder farming offers a range of opportunities for climate change adaptation and mitigation. In terms of adaptation, practices such as agroforestry enhance the resiliency of smallholder farms by decreasing the variability of crop harvests, reducing erosion and increasing capabilities for the management of increasingly scarce water resources (FAO 2011: 12). Agroecological production also has the potential to *increase* grain production (e.g. corn for animal feed) in the global South (Conway 2012: 311), while enabling smallholders to adapt to changing climatic conditions. Therefore, the promotion of agroecological production through practices such as crop rotations, integrated pest management, and agroforestry provide effective strategies for adaptation to climate risks that need not compromise productivity. As mentioned earlier, carbon sequestration from

agricultural soils also mitigates climate change given its potential to offset 5-15% of global fossil fuel emissions (Conway 2012: 311).

In wealthier regions such as the European Union, there is a growing awareness of the value of agroecological approaches to climate change mitigation and adaptation but also a more general tendency to take into account the multifunctional roles that agriculture plays for humans and non-humans alike. Spearheaded by policymakers in the European Union, the discourse of agriculture's 'multifunctionality' has not (yet?) entered into the discourse of non-EU policymakers like those who drafted the 2013 Memorandum of Understanding between Trinidad and Tobago and Guyana and the Regional Food and Nutrition Security Policy of 2010. Nor has the more environmentally-conscious (but still market-oriented) discourse of Ecosystem Services been used in relation to Caribbean food and agriculture. An alternative view of food security in the Caribbean, which responds to non-economic as well as economic values of food and farming, has the potential to reverse long-term trends of a corporate food regime that appropriates both land and labour for high-input food production.

Such politically-backed opportunities to diversify the value of food and land away from profit-driven productionism are less likely to arise in the Caribbean. For the structural violences of colonialism set up countries in the Caribbean (and elsewhere) as supply zones for the production of industrial foods in the metropolis, which were then exported back at premium cost and sold to elites and now, rising middle classes. Because colonialism engendered long-lasting controls over the globalisation of industrial foods but also the global uses of resources and the global dispersal of pollutants, some have suggested that the responsibility for climate action rests on former imperial countries. As anthropologists Susan Crate and Mark Nuttall argue: 'Climate change is environmental colonialism at its fullest development' Crate and Nuttall (2009: 11).

But climate change adaptation and mitigation is *also* the responsibility of Caribbean governments who continue to support a corporate industrial model that increases climate risks. In the

words of climate scientists at the University of the West Indies, Mona (Jamaica) campus: Caribbean governments must recognise ‘the problem, [take] *a claim of responsibility in part for its creation*, and [illustrate] a readiness to respond to the challenge (Taylor *et al.* 2012: 193, my emphasis). If Caribbean farmers are provided substantial economic incentives to lessen their dependence on fossil fuel-based inputs, then policies such as the RFNSP and the campaign to ‘put T&T food on your table’ may indeed provide a formidable alternative to import-driven food policies such as the Zero-VAT Bill and the 2013 MoU. While Caribbean governments are politically responsible for this change, some would argue that former imperial powers in the European Union should provide at least some of the financial means to make this change happen.

The continued dependence on industrial food in regions like the Caribbean may be curtailed if high environmental costs are made commensurable with economic valuations. At present, however, there is a serious discrepancy between agriculture’s contribution to global GHG emissions (30%) and its contribution to global GDP, which is valued at only 4% (Conway 2012: 307). This divergence of values lies at the heart of the modern food system, and thus we should look to the ‘energetic foundations of modernity [and globalisation] itself’ (Peet *et al.* 2011: 10) to understand how and why policies such as the RFNSP have diverged from what may have been good intentions.

Conclusion

The goal of social justice will be realized only if a regional planning authority pursues a social justice agenda. Just as easily, the authority could be controlled by business interests with little concern for social or environmental justice.

(Born and Purcell 2006: 205)

Food security policies in Trinidad and Tobago involve fundamental assumptions about the way food and the land on which it is grown is (or should be) distributed and valued. Such structures and values contrast with efforts in the Caribbean and elsewhere to establish other kinds of food systems, which are more conducive to climate change adaptation and mitigation. In this paper I have shown how food

production, processing, and consumption in Trinidad and Tobago are connected to national and transnational markets that firmly affix the country's food system to the fossil fuel economy. While recent efforts towards national and regional food security in Trinidad and Tobago are ostensibly geared towards the creation of more localised and regional food networks, such policies do not undermine long-distance corporate food and feed chains that rely on the mass production of high carbon foot print foods. Although policymakers in the Caribbean have called for the creation of more localised value chains in the region, their industrial approaches to food security have caused a number of *insecurities* among affected peoples and environments.

Brian Born and Mark Purcell (2006) argue that policies enacted in the name of local food systems are not necessarily more environmentally or socially just. In this paper I have shown how Caribbean food security policies reproduce *globalised* patterns of food production, exchange, and consumption despite ostensible shifts towards national or regional scales. Despite their ability 'jump scale' (Smith 1992) towards more localised value chains, recent food security policies in Trinidad and Tobago and the Caribbean continue to contribute to climate risks by maintaining corporate controls over food and agriculture. Unless such policies directly deal with *who controls what* – that is, issues of *power* – they will continue to reproduce the kinds of social and environmental injustices that have characterised the Caribbean since the time of colonialism.

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¹ Established under the Treaty of Chaguaramas in 1973, CARICOM was a successor to an earlier attempt to create a single regional market called CARIFTA (the Caribbean Free Trade Area), which was established in 1965 (Seaga 2005: 128). There are fifteen member countries of CARICOM, including Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St Lucia, St Kitts and Nevis, St Vincent and the Grenadines, Suriname and Trinidad and Tobago.

² As of the time of writing (mid-2014) Trinidad and Tobago has published an action plan but not a Food and Nutrition Security Policy, though plans for the latter are underway.

³ Earlier efforts in this vein include the Regional Food Plan of 1975, the Regional Food and Nutrition Strategy of 1983, the Caribbean Community Programme for Agricultural Development and Regional Action Plan, both of 1989, and the Regional Transformation Programme for Agriculture of 1996 (RFNSAP 2011: 21).

⁴ Massy (formerly Hi Lo) Supermarkets are part of a larger conglomerate that is also known as Massy (see the number and diversity of MNCs mentioned or shown in the Massy Group Corporate Video <http://www.neal-and-massy.com/Home/>).

⁵ Along with prospective investments from Trinidad and Tobago, the governments of China, Malaysia and India are also converting Guyanese lands into mega-farms to grow palm oil for biofuels.

⁶ As an elderly interviewee stated in 2012, chicken and other meat 'used to be what people ate in their Sunday best' but now 'KFC [Kentucky Fried Chicken] is a daily habit' among rising middle classes in Port of Spain (Wilson 2013).

⁷ See http://www.metoffice.gov.tt/Climate_Projections.